

**United States Patent** [19]**Dubois et al.**[11] **Patent Number:** **4,543,306**[45] **Date of Patent:** **Sep. 24, 1985**[54] **ELECTROCHEMICAL DEVICE WHICH CAN BE USED FOR ENERGY STORAGE**[75] **Inventors:** Jean C. Dubois; Gérard Tourillon; Francis Garnier, all of Paris, France[73] **Assignee:** Thomson-CSF, Paris, France[21] **Appl. No.:** 499,788[22] **Filed:** May 31, 1983[30] **Foreign Application Priority Data**

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[51] **Int. Cl.<sup>4</sup>** ..... H01M 4/60; G02F 1/01[52] **U.S. Cl.** ..... 429/194; 429/213; 350/357[58] **Field of Search** ..... 429/213, 194; 350/357[56] **References Cited****U.S. PATENT DOCUMENTS**

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The invention relates to electrochemical devices and in particular energy storage devices.

The object of the invention is the use in such devices of at least one conductive support, covered by a polymer film, obtained by electrochemical polymerization of at least one monomer having at least one aromatic heterocycle with five links containing a single heteroatom, the polymer being in accordance with the general formula:  $(M+X-y)_n$ . The basic monomer is a pyrrole, thiophene, furan or indole and is substituted by at least one group of the alkyl, alkoxyl, hydroxyl aryl, substituted aryl, halogen, methyl trihalide, cyano, amino or dialkyl-amino type.

**14 Claims, 2 Drawing Figures**